

## Advanced abdominal pregnancy with successful live newborn: a case report

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### ABSTRACT

**INTRODUCTION:** Abdominal pregnancy is a rare type of ectopic pregnancy, and it is associated with high morbidity and mortality. Its diagnosis is very challenging to establish, most often in an acute setting, leading to a high percentage of fetal and maternal morbidity and mortality.

**CASE PRESENTATION:** We present the case of a 27-year-old G2P1001 with abdominal pregnancy at 35 weeks 3 days who presented with painful fetal movements. She consulted the district hospital initially, where she was misdiagnosed and reassured as having a normal, evolving pregnancy. Later, with worsening of symptoms, she was referred to the tertiary hospital, where she was assessed, and ultrasonography findings revealed an empty uterus, a live fetus outside the uterine cavity, the placenta attaching to the fundus (ill-defined fundus), consistent with advanced abdominal pregnancy with a live fetus. Laparotomy was planned and performed, and a healthy newborn was born. The mother successfully recovered and was discharged uneventfully with her baby.

**CONCLUSION:** Abdominal pregnancy poses a challenge in establishing a diagnosis, with a greater chance in cases of increased awareness. It requires a high index of suspicion for diagnosis and skills, as timely diagnosis leads to the correct treatment immediately and reduces morbidity and mortality. The Ministry of Health, in collaboration with the teaching universities, should prepare timely refresher courses for junior doctors to increase their awareness and enhance early ultrasonography to confirm the location of pregnancy for pregnant mothers.

**Keywords:** Abdominal Pregnancy, Laparotomy, Live Newborn

### INTRODUCTION

Abdominal pregnancy happens when the gestational sac is implanted in any area of the abdominal cavity but outside of the female reproductive tract, where the most common site of implantation is the Douglas pouch [1–3]. It accounts for 1-2 % of all ectopic pregnancies, and it has the same risk factors as tubal pregnancies,

which include pelvic inflammatory diseases, use of assisted reproductive technology, and endometriosis[4]. Abdominal pregnancy may be primary or secondary; it is considered primary when the blastocyst implants and grows in the abdominal peritoneum, while it is called secondary when the blastocyst migrates to the peritoneum after uterine or tubal rupture [2,4]. Abdominal pregnancy may grow to advanced gestational

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age; this is its unique feature among all ectopic pregnancies [3].

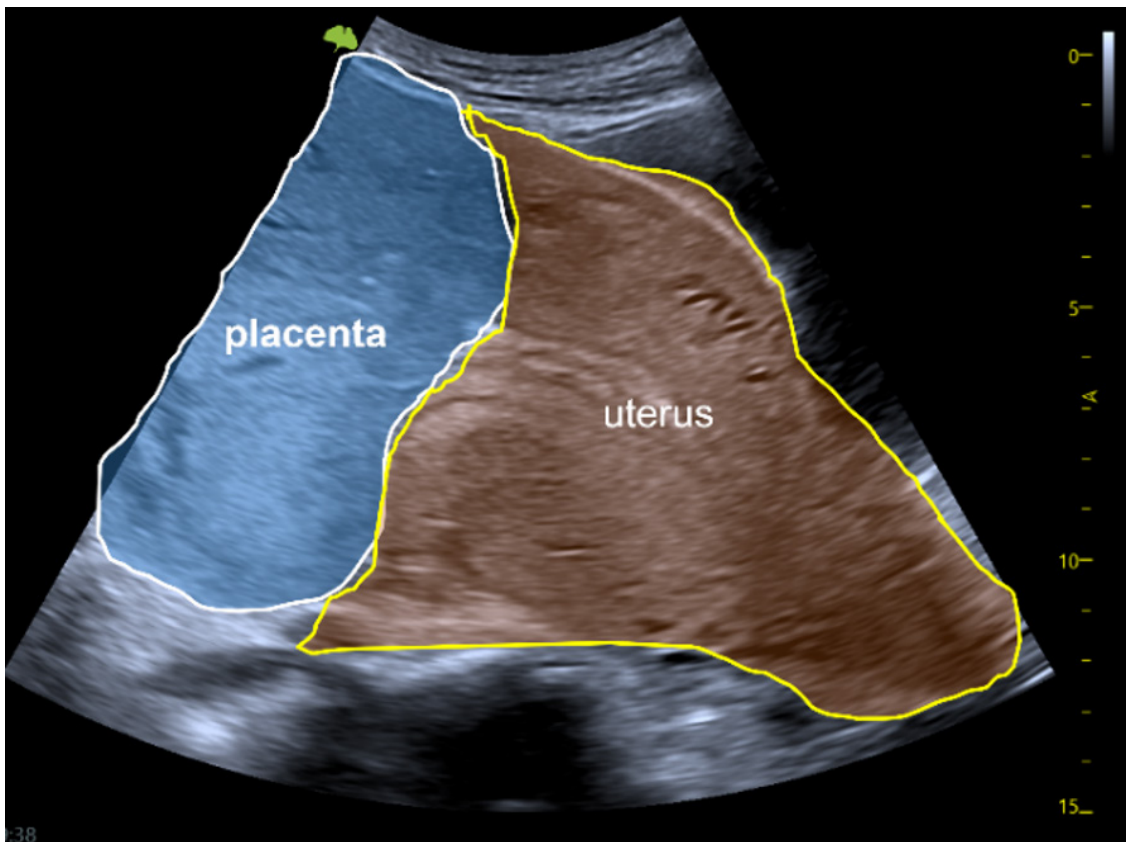
Clinical presentations of abdominal pregnancy are nonspecific and include abdominal pain, vaginal bleeding, which is the same as other first-trimester conditions; its diagnosis requires a high index of suspicion and experienced healthcare professionals because it is easy to miss it with the current physical exam and ultrasound scan [5–7]. The most common abdominal pregnancy is diagnosed intraoperatively, where most preoperative diagnoses are tubal pregnancy but intraoperatively, it is found to be abdominal pregnancy [6]. Its management is also complex because of many complications, which include maternal hemorrhagic shock, post-delivery sepsis, even maternal death and neonatal death (40–95%) [3,4,6]. However, sometimes good outcomes have been reported. A surviving fetus from an abdominal pregnancy is extremely rare, and neonates who survive are prone to have a high rate of fetal deformation and perinatal death [8].

Informed consent from the mother was obtained

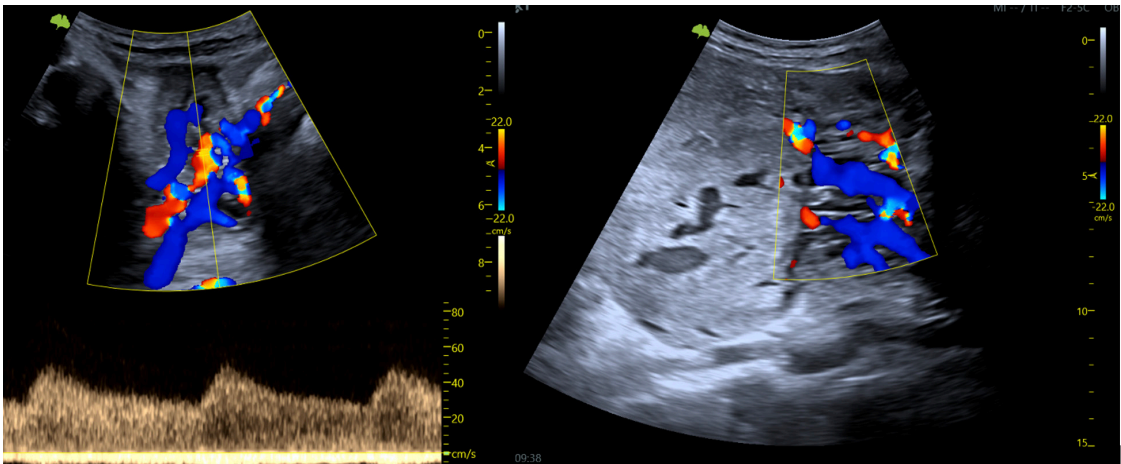
for the publication of the patient's medical case details and post-delivery image of the baby, prior to publication. No Institutional approval was required for the publication of this case report.

## CASE PRESENTATION

A 27-year-old G2P1001 at 35 weeks of pregnancy and 3 days by her last menstrual period, presented with a history of progressively worsening painful fetal movements for 2 weeks. The abdominal pain started around 3 months ago, mainly in the hypogastrium. She had no contributive medical and surgical history. At that time, she consulted different hospitals and was told to have an intrauterine pregnancy. She was given analgesia and reassured. With progressively worsening symptoms, she consulted the district hospital, where it was challenging to diagnose abdominal pregnancy or uterine rupture, and was referred for tertiary-level review. The patient denied any vaginal bleeding and had normal vital signs. The patient was admitted and reviewed, and the positive findings were a gravid abdomen with



**Figure 1: Ultrasound findings showing the empty uterus with an ill-defined fundus with placenta insertion**



**Figure 2: Increased vascularity**

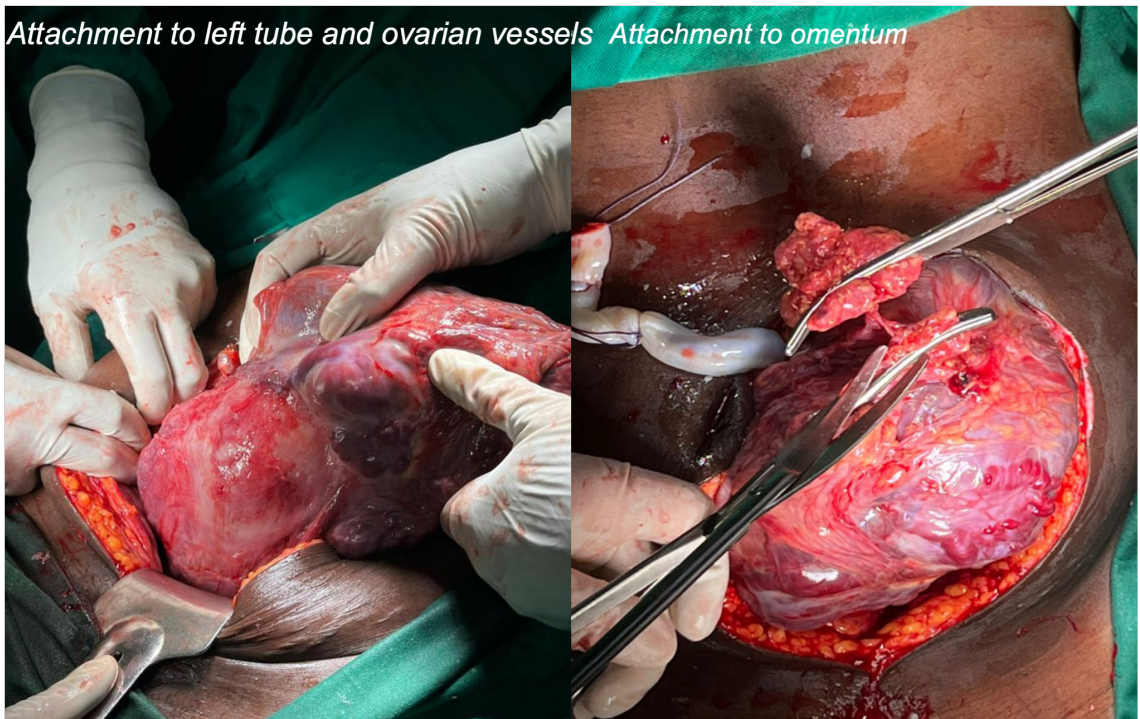
*On the left side, it shows tortuous left ovarian vessels explaining its contribution to the supply of the pregnancy, and on the right, it shows tortuous uterine vessels.*

palpable fetal parts, with moderate discomfort and no objective vaginal bleeding.

The obstetrical ultrasound findings showed an empty uterus, no myometrium between the fetus and the abdominal wall with an ill-defined fundus and fundal implantation of the placenta (Figure 1). The uterine artery showed increased blood flow

with no resistance, indicating its involvement in the blood supply to the placenta and abdominal pregnancy. The left ovarian vessels were tortuous, suggesting the contribution of ovarian vessels to the blood supply of the pregnancy (Figure 2).

The fetus in transverse presentation with positive cardiac activity, weighing 2.1kg, has



**Figure 3: Intraoperative findings**

*On the right side, this is the uterus with the fundal placental insertion with tortuous vessels from the uterus and ovary, whereas on the left side, the placenta is being dissected off the uterus and omentum*

oligohydramnios with amniotic fluid seen at 1.6 x 1.66 cm. The placenta was attached to the feeding vessels and was visible on color Doppler (Figure 2). The patient was counseled on the diagnosis, the need for explorative laparotomy, delivery, and the possible complications. Her preoperative hemoglobin was determined, which was 10.8 mg/dL. Three units of blood were prepared prior to the surgery. A multidisciplinary team approach involving a general surgeon, anesthesiologist, neonatologist, gyn-oncologist, and materno-fetal medicine specialist was used to anticipate possible fetal and maternal complications, and the neonatal and adult intensive care units were contacted. After providing written consent, the patient was taken to the operating theater.

During laparotomy, a vertical incision was made, and the abdominal pregnancy was apparent with the fetus in the sac with an intact membrane. A live female neonate weighing 2300 grams and an Apgar score of 8 and 9 in the first and fifth minutes, respectively, was delivered with no visible abnormal external findings on the neonatal exam. The placenta was attached to the omentum, uterine fundus, and left fallopian tube, involving the left ovarian vessels; however, both ovaries were intact and normal. The placenta was dissected step by step after adhesiolysis. Bilateral salpingectomy was done (Figure 3).

The left fallopian tube, tortuous ovarian vessels, and presence of utero-peritoneal fistula at the uterine fundus suggested a secondary abdominal pregnancy, likely resulting from a ruptured tubal pregnancy.

The estimated blood loss from the procedure was 1500 ml. The mother was transfused with 1 unit of packed red blood cells intraoperatively. The mother was transferred to the recovery room and later into the puerperium room under close follow-up for possible bleeding and changes in vital signs. The mother had normal vital signs in the course of her hospitalization. Her postoperative hemoglobin was 11 mg/dL and she was discharged with her healthy neonate after 4 days.

## DISCUSSION

Abdominal pregnancy is an uncommon condition accounting for 0.6 to 4% of all ectopic pregnancies. It is associated with both maternal and neonatal complications, including bleeding, infections, renal failure, and death [9]. It can be classified

as primary and secondary with reference to the physiological pattern of occurrence. It is primary in cases where the embryo implants in the abdominal cavity, which is the less common type. It is secondary when it occurs after a ruptured tubal pregnancy or a tubal abortion or even a uterine rupture or perforation. The determination of primary peritoneal pregnancy requires criteria that include the presence of a pregnancy of less than 12 weeks in which trophoblastic attachments are related solely to a peritoneal surface, normal bilateral tubes and ovaries, and the absence of uteroperitoneal fistula [5,6].

A surviving fetus from an abdominal pregnancy is extremely unusual, and neonates who survive are reported to have a high rate of fetal deformations and perinatal death[3]. Due to delays in diagnosis and difficulties in the management of abdominal pregnancy, the risk of mortality is significantly higher than for uncomplicated ectopic pregnancies[2]. The diagnosis of abdominal pregnancy is challenging, and an intraoperative finding occurs in 40 to 50% of cases, despite antenatal follow-up and ultrasound scan [10].

The clinical features of abdominal pregnancy are variable and depend on the intra-abdominal organs involved and the placenta insertion. The main signs and symptoms include painful fetal movements, bowel symptoms, vaginal bleeding during the first trimester, and palpation of fetal parts near the abdominal wall[10]. Abdominal pregnancy is easily missed during antenatal care and ultrasound scanning. It requires a high index of suspicion for its diagnosis. Unfortunately, most of these signs only appear during already advanced abdominal pregnancies, as with our patient[11].

Once abdominal pregnancy is suspected, due to fetal malpresentation, malformations or oligohydramnios, focused sonography is helpful. The finding of an abnormally high maternal serum alpha-fetoprotein and beta-hCG has been proposed [12]. Other radiological studies, such as magnetic resonance imaging, are helpful in the later stages[13]. In our case, the diagnosis was difficult and missed on the initial obstetric ultrasound at the district hospital.

The definitive treatment of advanced abdominal pregnancy is surgical, at best by laparotomy, for better control of the hemorrhagic risk related to the extraction of the placenta [10,12]. Bleeding from the placental site can be a life-threatening complication during laparotomy. It is generally

recommended to leave the placenta in situ and monitor the patient's human chorionic gonadotropin levels [14]. The use of methotrexate to accelerate the resorption is controversial as it may contribute to a greater risk of infection due to an accelerated placental necrosis [13]. When the placenta is left in place, it is necessary to monitor for the possible maternal complications in the postoperative period: bowel obstruction, infection, hemorrhage, anemia, and fistula [11].

In this case, the placenta was strongly adherent to the fundus and the left fallopian tube and ovarian vessels, and there was significant bleeding from a detached portion of the placenta and the uterus. Removal of the placenta, bilateral salpingectomy and the uterine repair were done with good hemostasis. For the newborn, it is very important to rule out congenital malformations and deformities. There are reports of fetal deformities and malformations as high as 40% associated with abdominal pregnancies [14].

When the diagnosis is late, or when it is done intra-operatively, the fetal prognosis is often very pessimistic, with a perinatal mortality which varies between 40% and 95% as documented in previous studies [1,11,13].

In this case, no congenital malformations were detected, and the baby exhibited a normal morphological appearance and reflexes upon examination.

## CONCLUSION

Abdominal pregnancy with a healthy newborn is a rare occurrence. Its diagnosis is difficult, so careful examination of the pregnant woman is important. The health institutions in developing countries should emphasize making routine early ultrasound accessible to pregnant women, and the healthcare providers should have a high index of suspicion of the possibility of ectopic pregnancy as well as abdominal pregnancy, irrespective of the gestational age. The Ministry of Health, in collaboration with teaching universities, should prepare timely refresher courses for junior doctors to increase their awareness and enhance early ultrasonography for confirming the location of pregnancy in pregnant mothers.

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